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ABSTRACT

This paper argues that Attention Deficit Hyperactivity Disorder (ADHD) should be viewed as a dysfunctional relationship between an individual with certain predispositions and an environment which generates certain expectations, demands, and reactions. The paper presents a model in which: ADHD behaviors result from a combination of inherent neurological factors interacting with environmental circumstances and demands; relevant aspects of the individual's inherent biochemical nature may have been determined by either hereditary or environmental factors or both; ADHD behaviors may be alleviated most effectively by attending to both the individual and the environment; and ADHD students will succeed best when teachers and schools try to meet the needs of these students rather than merely trying to fit them into a rigid system, while considering the usefulness of medication. The paper then presents a systems-theory approach to educating ADHD students. Ten ways that whole language classrooms may be particularly beneficial for ADHD students are discussed. The paper also describes additional ways of providing the kinds of structure that ADHD students need, an example illustrating a whole language approach to behavior problems, and low-cost but high-efficiency support services that the school might provide to ADHD students and their teachers. (49 references) (JDD)

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Abstract

Understanding and Educating Attention Deficit Hyperactive Students: Toward a Systems-theory and Whole Language Perspective

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Briefly discussing the view that learning disabilities are more a social construct than a biological and neurological phenomenon, the author suggests that Attention Deficit Hyperactivity Disorder is not a learning disability per se. She argues for viewing Attention Deficit Hyperactivity Disorder from the perspective of general systems theory, according to which causes are multi-dimensional and multi-directional--a both/and view contributing to and supporting a transactional, constructivist, holistic paradigm of human learning. From this perspective, ADHD is not so much a disorder (located within the individual) as a set of dysfunctional relationships between an individual with certain predispositions and an environment which generates certain expectations and demands and reactions. According to this model, (1) ADHD behaviors result from a combination of inherent neurological factors interacting with environmental circumstances and demands; (2) relevant aspects of the individual's inherent biochemical nature may have been determined by either hereditary or environmental factors, or both; (3) ADHD behaviors may be alleviated most effectively by attending to both the individual per se, and the environment (altering expectations, patterns of interaction, and so forth); (4) educationally, ADHD students will succeed best when teachers and schools try to meet the needs of these students rather than merely try to fit them into a rigid system, yet also consider that medication may help such students function better, socially as well as academically. The second half of the paper focuses on a systems-theory approach to educating ADHD students, instead of just trying to manage their behavior in the classroom. The author describes ten ways that whole language classrooms may be particularly beneficial for ADHD students; suggests five additional ways of providing, in such classrooms, the kinds of structure that ADHD students need; and offers an extended example to illustrate a whole language approach to behavior problems. A section on additional educational services ("the larger system") describes some low-cost but high-efficiency support services that the school might provide as needed to ADHD students and their teachers, in accordance with the provisions of the Individuals with Disabilities Education Act (originally PL 94-142) and Section 504 of the Rehabilitation Act of 1973. The paper draws significantly upon the author's concept paper published by the National Council of Teachers of English in 1991 and titled *Alternatives in Understanding and Educating Attention-Deficit Students: A Systems-based Whole Language Perspective.*

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Understanding and Educating Attention Deficit Hyperactive Students: Toward a Systems-theory and Whole Language Perspective

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In the 1970s, various critics suggested that there was no such disorder as "hyperactivity." This was a mythical construct devised by parents and especially teachers who just couldn't or wouldn't cope with the individual needs of the rambunctious and bored child. "Hyperactivity" and learning disabilities, it was argued, are concepts instigated by middle class parents desperate for some acceptable explanation as to why their children are not succeeding in school (Schrag & Divoky, 1975; for more recent criticisms of hyperactivity, see Schachar, 1986, and Kohn, 1989; for related criticisms of learning disabilities, see Carrier, 1983, and Sleeter, 1986). In societal terms, such labeling reveals that normality is defined in terms of conformity (Hobbs, 1975). "Hyperactive" children, then, are simply those who fail in certain ways to conform to the expectations of society.

Recently there has been intensified support for the idea that learning disabilities are more a social construct than a biological and neurological phenomenon. For example, Gerald Coles has mounted a detailed argument against the accepted "reductionist and determinist neurological thesis" accounting for learning disabilities (1987, p. 134), positing instead a theory of interactivity that places primary responsibility for alleged learning disabilities upon the various forces within education and society (Coles, 1987; see responses in the May 1989 issue of the *Journal of Learning Disabilities*). Bartoli & Botel (1988) have argued persuasively for what they call an ecological systems approach to understanding and alleviating reading/learning difficulties. And ethnographers like Denny Taylor have provided persuasive and shocking evidence of the harm done to children by an educational and psychological establishment determined to locate the cause of school

difficulties in the learner rather than in the educational approach or the diagnostic procedures and practices of Special Education (1990). Taylor's case study of Danny exemplifies what Coles argues so persuasively: that if "the structural forces and relationships in the interactivity that produces educational failure are not addressed, challenged, and changed, the educational 'poor' will be with us forever" (Coles, 1987, p. 212).

With such impetus comes increasing recognition that we need to examine how the environment contributes to the genesis, diagnosis, maintenance, and treatment of alleged learning disabilities and conditions like Attention Deficit Hyperactivity Disorder (the current label for what used to be called hyperactivity, minimal brain disorder, minimal brain dysfunction, and so forth).

More generally, such arguments and anecdotal evidence indicate all too clearly that professionals dealing with the psychological health and educational success of children need to reconsider the mechanistic, linear thinking that leads to seeing the locus of learning difficulties as solely within the child (Heshusius, 1989), and to reject the educational models that reflect a mechanistic paradigm: the medical model, the psychological process model, the behaviorist model, and the cognitive/learning strategies model (Poplin, 1988a).

At least in the case of Attention Deficit Hyperactivity Disorder, however, it would be inappropriate to replace a simplistic neurological deficit model with an equally simplistic environmental model, locating the child's difficulties entirely within the environment and therefore seeking remedies that address external factors only. What offers considerable promise for understanding ADHD and how to educate ADHD students more effectively is a systems-theory approach, drawing upon the kind of thinking espoused by Ludwig von Bertalanffy in his general systems theory (1968) and further refined and modified by Gregory Bateson (1972) and others. This version of systems theory rejects simplistic cause-effect reasoning and linear explanations, seeing causation as multi-dimensional and multi-directional. Systems theory both contributes to and supports a transactional,

constructivist, holistic paradigm of human learning (Weaver, 1985; Poplin, 1988b; Heshusius, 1989; Weaver, 1991b), an ecological perspective of learning disabilities (Bartoli & Botel, 1988), and a whole language philosophy of education (Goodman, 1986; Weaver, 1990; Edelsky, Altwerger, & Flores, 1991; and the November 1989 issue of *The Elementary School Journal*). Each of these stances views the individual as part of larger systems that intersect and interact with each other and with the individual, all simultaneously shaping and being shaped by each other.

Within this broad framework, the thesis of this article is two-fold: (1) that ADHD is best understood from a systems-theory perspective, and (2) that educating ADHD students should likewise be approached from that perspective, within which whole language education offers particular promise (see also Weaver, 1991a).

Understanding ADHD: A Systems View

Increasingly, clinicians and researchers have come to the conclusion that Attention Deficit Hyperactivity Disorder is characterized by problems in restraining impulses as well as in focusing and maintaining attention. The hyperactivity involved in ADHD is related to, and may in fact stem from, the difficulty in restraining impulses (e.g. Barkley, 1990). It seems likely that the American Psychiatric Association's forthcoming *Diagnostic and Statistical Manual* version IV will list the defining characteristics under two relatively separate behavioral dimensions: Inattention-disorganization, and Impulsivity-hyperactivity (e.g. Lahey & Carlson, 1991). It is increasingly recognized that these patterns may be exhibited by adolescents and adults as well as by children (Wender, 1987; Kane et al., 1990).

Unlike learning disabilities, ADHD is typically "diagnosed" not by standardized tests, but on the basis of difficulty in coping with the demands of everyday life. Indeed, ADHD seems not to be a learning disability or difference per se (e.g. Silver, 1990), nor

even simply a special handicapping condition with respect to education. Often, the difficulties and dysfunctional behaviors associated with ADHD are not confined to the classroom or the school, but occur across all aspects of the individuals' lives, contributing to poor relationships with parents, siblings, peers, spouses and children, employers and co-workers, and the community.

What seems most noticeable to those who live, work, attend school, or engage in leisure activities with ADHD individuals is that they seem virtually unable to use what they know about the social inappropriateness or probable consequences of their actions to resist impulses--impulses to do anything except boring schoolwork, to engage in disruptive or hurtful or destructive behavior, to break other rules and laws, and even to ignore their own determination to behave more appropriately and acceptably. They seem to be at the mercy of their emotions and impulses, which in turn are often reactions to the environment. In short, ADHD individuals seem to have a biological predisposition to act in ways that society considers dysfunctional and/or inappropriate.

ADHD should be understood, then, not simply as a neurological condition, but as a social construct. In effect, *ADHD is not so much a disorder (located within the individual) as a set of dysfunctional relationships between an individual with certain predispositions and an environment which generates certain expectations and demands and reactions.*

This is part of what it means to take a systems view of ADHD. A systems view rejects the simplistic notion that alternatives are necessarily mutually exclusive--in this case, that ADHD resides solely within the individual, or that ADHD behaviors are caused solely by the environment. Instead, a systems view sees alternative explanations as more often complementary, leading to a fuller understanding of phenomena all too often viewed simplistically. A systems view of ADHD requires at least the following:

1. It means recognizing that while ADHD may have origins in the individual's neurological functioning, in biology and physiology, it needs to be understood

in sociological terms, as difficulty in responding to certain kinds of expectations and external demands. In other words, it means conceptualizing ADHD in terms of both the individual and the environment.

2. It means recognizing that even the biological and physiological aspects of ADHD may stem from environmental rather than genetic causes, though heredity does often seem to be a factor.

3. It means not just "treating" or attempting to change the behavior of the individual, but changing expectations and demands and ways of interacting with the child, adolescent, or adult who exhibits ADHD behaviors.

4. In schools, it means attempting to meet the needs of students rather than trying to fit the students into a rigid system, yet also accepting the possibility that some students may function better, socially as well as academically, with appropriate medication.

Insert Figure 1 about here.

See Figure 1 for a visual representation of this systems view of ADHD and the complex interrelationships that give rise to and alleviate ADHD behaviors. Obviously a systems view of ADHD includes both a medical and a sociological perspective, as indicated also in the recent work of some psychologists focusing on ADHD (Anastopoulos, DuPaul, & Barkley, 1991; Barkley, 1990; Robin, 1990; Robin and Foster, 1989); E. Taylor, 1986; implicit also in Gordon, 1991). Most of these psychologists emphasize the family as a system affecting and being affected by ADHD. The present article goes beyond, emphasizing the school and the classroom as systems that can either exacerbate or alleviate ADHD behaviors.

A medical perspective

The traditional medical model of ADHD is a deficit model, which is primarily why the aforementioned social/educational critics and many educators have rejected the construct of ADHD. Nevertheless, there is growing evidence that intractable impulsivity, hyperactivity, and inattentiveness may be enhanced by neurological structure and/or functioning.

Some recent studies suggest differences in size or functioning of different aspects of the central nervous system (Hynd, Semrud-Clikeman, Lorys, Novey, Eliopulos, and Lyytinen, 1991; Klorman, 1991). Blood flow studies and recent studies using high-tech procedures like Brain Electronic Activity Mapping (BEAM), Magnetic Resonance Imaging (MRI), and Positron Emission Tomography (PET) increasingly link ADHD to underfunctioning of certain neural pathways within the central nervous system (Barkley, 1990, p. 29; Shelton & Barkley, 1990, p. 211). Other lines of research suggest that what causes this "underfunctioning" may be an insufficiency of certain brain chemicals, most notably certain neurotransmitters like dopamine and norepinephrine (Zametkin & Rapoport, 1987). A recent and widely publicized study by Zametkin and his colleagues at the National Institute of Mental Health used PET scans (Positron Emission Tomography) to confirm earlier findings of reduced glucose metabolism in the brains of ADHD adults, compared with others--particularly in the pre-motor cortex and the superior prefrontal cortex (Zametkin et al., 1990). See Figure 2.

Insert Figure 2 about here.

While there is no clear-cut evidence as to exactly what aspects of brain structure or functioning are implicated in ADHD, researchers seem to be converging on evidence that ADHD behaviors involve a bio/physiological condition, with heredity often a factor in a child's development of ADHD. (This conclusion is based on a wider range of studies than

those discussed in Coles, 1987, including several studies that are more recent). Other causes may include brain damage, pregnancy factors (e.g. maternal consumption of alcohol) and birth complications, toxins (especially lead), infections, and diet. Sensational claims have been made about food additives or sugar causing hyperactive behavior (e.g. Feingold, 1975), but a sizable body of research has failed to confirm these as common causes of ADHD (see discussions in Barkley, 1990, pp. 95-100; Gordon, 1991, pp. 69-72). Clearly, though, environment as well as heredity may contribute to the particular neurological functioning that seems to be a significant component of ADHD.

Overall, there seems to be growing evidence of a neurological factor contributing to the behaviors characterized as ADHD. Or in other words, there seems to be growing evidence that ADHD does exist in part biochemically--even though ADHD is constantly being defined and redefined by the experts, even though researchers do not completely understand its causes or the mechanisms by which it operates, and even though there is significant disagreement as well as a significant degree of consensus within the field (Shaywitz and Shaywitz, 1991).

From a systems perspective, however, it is more appropriate to conceptualize ADHD in terms of differences in neurological functioning, rather than deficits--and of quantative rather than qualitative differences (Shelton & Barkley, 1990, p. 214). These quantitative differences give rise to behaviors along a continuum, from what is socially desirable and functional for the individual to what is socially intolerable and self-defeating. Viewed this way, a medical perspective makes an essential contribution to a broader systems view of ADHD.

A sociological perspective

As previous examples indicate, environmental factors may play a role in the genesis of ADHD, as well as in its definition and diagnosis. In addition, social and situational factors play a role in the maintenance and treatment of ADHD.

Regarding the initiation and maintenance of ADHD behaviors, people and situations can make it either harder for ADHD individuals to restrain impulsive and hyperactive behavior and to pay attention and concentrate, or easier for them to exercise self-control and maintain attention. The following excerpt from a session with a therapist provides an all-too-typical example of how a parent can elicit a child or adolescent's predisposition to ADHD behavior. The therapist's comments begin to clarify how, in systems theory, ADHD is viewed as an interaction between the characteristics of the individual, on the one hand, and the demands, expectations, initiations and responses from the external environment, on the other. In this case, the mother quickly exacerbates the teenager's predisposition:

Therapist: So what are the major problems at home?

Mrs. Cohen: Matthew's bad temper. He gets really angry for no good reason. Then he curses, yells, and is totally out of control.

Matthew: You're full of it, Mom! I don't do that! You're just a nag!

Therapist: Wait a minute, Matt. I know you feel strongly about this, but I have to check out something with your mother first. Give me a play-by-play description of a recent temper outburst.

Mrs. Cohen: I said, "Don't you have homework?" He said, "No," and I said, "Come on, your teacher says she always gives homework. Tell us the truth." And . . .

Matthew: See, there she goes bugging me and thinking I'm always lying.

Therapist: Matthew, I know you feel strongly. And I can see how when your mom puts you on the spot about homework, you come out slugging.

Mrs. Cohen: Doc, you got it. He actually ended up pushing and hitting me last night.

Therapist: So, when you say that Matt loses his temper easily, you are talking about something between you and Matt, not just Matt. You ask nicely first. He doesn't answer. So you turn the screws a bit and press him, suggesting he is lying or

holding back on you. He clobbers you back. We are looking at a sequence of communication between the two of you, not just one person losing his temper, right?

Mrs. Cohen: I guess so, but it's his ADHD that makes him do it, not my question.

Mattahew: There she goes again, with that ADHD shit! Next she's going to tell you about Ritalin, "the miracle drug."

Therapist: Matt, sounds like you get pretty mad and sarcastic when your mom blames your ADHD for everything. Mrs. Cohen, a person with ADHD is like a tightly stretched guitar string. The string can break if you pluck it too hard, but it must be plucked to break. Matt may be more likely to explode because of his biology, but it still takes your statement to set him off. And with the guitar, if you pluck the string just right, you can make beautiful music. You and Matt have the potential to get along with more harmony, even if his ADHD makes him like the tight string. This is a two-person problem. We need to change how you two communicate, not just Matt and not just Mom. (Robin, 1990, pp. 471-2)

Here the therapist reframes the problem: ADHD does not merely reside within the individual. Rather, it arises as the individual transacts with the external environment. The individual has the potential for certain behaviors that characterize ADHD, but the extent to which and the ways in which these are manifested depend somewhat, and sometimes a lot, upon the external environment.

Situational demands can have a profound effect upon ADHD behaviors. For example, research clearly demonstrates that ADHD children have great difficulty attending to tasks that they find boring, such as completing dittos and worksheets. They find it much easier to attend to tasks they find stimulating and meaningful. While some critics and even clinicians have assumed that such situational variation might automatically rule out a diagnosis of ADHD, other researchers have suggested that variation across situations might

actually be considered a definining characteristic of ADHD (Barkley, 1990, p. 49). In other words, it may be primarily ADHD individuals who find it virtually impossible to complete boring tasks, yet somehow (or sometimes) possible to complete what genuinely interests them.

What emerges from research and experience is a picture of ADHD as a "system" involving both individual characteristics and environmental influences. Within the life of an individual who is biologically/physiologically predisposed to certain kinds of behaviors, various forces intersect and interact: parents, teachers, and peers, for example; or home, school, neighborhood, and community. These participate in creating what is perceived as ADHD. It's a both/and phenomenon: both bio/physiological and sociological, involving the individual in transactions with others in society.

Educating ADHD Students: Addressing the Individual within the System

If indeed ADHD is both a bio/physiological and a sociological phenomenon, it seems only logical that alleviating ADHD behaviors may be accomplished by addressing either the individual or the environment, and preferably both.

Unfortunately, the most certain statement that can be made about alleviation of ADHD behaviors is that *nothing* consistently or typically produces long-term effects--an observation consistent with the hypothesis of a neurological factor.

Conventionally, there have been three basic approaches to trying to change the individual: a cognitive approach, which attempts to help ADHD individuals develop self-control of their behavior; a behavioral approach, which relies on eternal control; and medication, which assumes a biochemical effect. Both cognitive and behavioral approaches seem to have limited effects, seldom generalizing or transferring to times or situations other than when the training programs are in effect (Abikoff, 1991; Gordon et al., 1991; Pfiffner & Barkley, 1990, pp. 538-39). To date, even the chemical treatments

for ADHD, such as Ritalin, work only for a few hours at a time, and unevenly at that. Nevertheless, between 70% and 80% of children with ADHD do appear to exhibit a positive response to central nervous system stimulants (Ritalin, Cylert, or less often Dexadrine), an improvement significantly greater than that perceived with placebos (DuPaul and Barkley, 1990; also Baren, 1989; Gordon, 1991). That is, these medications typically reduce impulsive and hyperactive behavior and increase attentive behavior, during the hours for which each dose is effective.

In school situations, behavioral approaches may temporarily produce positive effects. However, behavioral approaches concentrate primarily upon managing students' behavior in traditional classrooms, without regard for the appropriateness of such classrooms. Traditional classrooms demand of ADHD students everything they are not good at: sitting still and not talking, concentrating on dittos and other skills work that they find boring, and not speaking or acting impulsively. In other words, traditional classrooms exacerbate ADHD behaviors and thus intensify others' perception of the student as having an Attention Deficit Hyperactivity Disorder. In the short run, behaviorists' procedures for carefully monitoring time and attention to seatwork tasks may control ADHD behaviors, producing temporary, localized compliance. But in the long run, the inappropriate behavioral and curricular expectations may, in fact, engender resistance to this dehumanizing kind of schooling--in the form of behavior that is even more inattentive, disruptive, or harmful (Heshusius, 1989; Bartoli & Botel 1988, p. 219). Such intensified ADHD behavior will further contribute to "blaming the victim" for behaviors that are more complex in origin.

Because the demands of the traditional classroom are so difficult for ADHD students to meet, and because the appropriateness of these behavioral and curricular expectations is so rarely questioned, perhaps it is not surprising that most of the professional literature on the schooling of ADHD students focuses almost exclusively on

managing their behavior. This in turn leads many educators to conclude, erroneously, that ADHD students can (at best) be only managed, not educated. Such a conclusion is a pervasive but inaccurate and unproductive consequence of locating the difficulty solely within the individual, rather than within the system.

What may hold the greatest promise is treating the individual with medication if that proves beneficial, while changing traditional expectations and practices so as to maximize the student's success, both academic and socially (e.g. Whalen and Henker, 1991). What ADHD students need is what so-called learning disabled students--and indeed, all students--need: not a fragmented, skills-oriented curriculum, but a curriculum that keeps language and learning whole and meaningful, that offers students choice and ownership of learning, and that supports learners in taking more responsbilitiy for their own learning and their behavior.

Whole Language: Modifying Educational Expectations and Practices

This is precisely the kind of education offered in good whole language classrooms. Whole language teachers do not merely settle for managing students in the classroom and assigning seatwork (dittos, worksheets, workbook activities) on isolated skills. Nor do whole language teachers settle for merely managing the behavior of ADHD students, though an intelligent approach to helping children learn to self-manage their behavior may be part of the educational agenda (Collis and Dalton, 1990). Beyond that, whole language teachers are genuinely concerned about offering all children a challenging education (Goodman, 1986; Weaver, 1990; Edelsky et al., 1991).

In practice, this means that ADHD students too are offered the meaningful learning experiences that make it somewhat easier for them to focus attention and concentrate. Like other students, ADHD students find it easier to attend to tasks that excite their curiosity and interest, that challenge them, and that they perceive as worthwhile (Barkley, 1990, p. 49).

As psychologist Michael Gordon puts it, "Down with education by ditto" (Gordon, 1991), and, by implication, up with education that is thought-provoking, creative, and above all meaningful.

The potential of whole language classrooms

The following are some characteristics of whole language classrooms and whole language teaching that make such education more promising for our ADHD children than traditional classrooms:

1. Whole language teachers are particularly sensitive to the interests, abilities and needs of their students, both collectively and individually. They shape the curriculum with and in response to students, instead of expecting the students to cope with a prepackaged curriculum. And they attempt to meet the needs of individual students. Of course, this is particularly important for ADHD children and youth.

2. Whole language teachers emphasize all students' strengths. They find ways of using students' strengths to alleviate, compensate for, or avoid accentuating their weaknesses.

3. Furthermore, whole language teachers often try to alleviate students' difficulties by working around their weaknesses--for example, by encouraging ADHD students to compose on computers rather than to write laboriously by hand. These interrelated aspects of whole language teaching are particularly important for boosting self-esteem and self-confidence.

4. Whole language teachers avoid worksheets, workbooks, and isolated skills work--a particular boon for ADHD students, who find it extraordinarily difficult to concentrate on such work.

5. Whole language teachers provide many opportunities for students to choose learning experiences that are meaningful to them: to choose what books to read, decide

what to research and investigate, determine what to write and how to write it, for example. It is significantly easier for ADHD students to concentrate on tasks they find interesting and meaningful.

6. Whole language teachers encourage students to think not only critically but creatively, and to engage in learning experiences that foster such independence of thought and expression. This is especially important for many ADHD students, who may often be among the most creative and divergent thinkers in the class.

7. Whole language teachers allow and even encourage a significant degree of mobility in the classroom, as students locate resources, confer with peers, move from one learning center or area to another. They also tend to be tolerant of individual students' need to fiddle with something, move their feet, or sit or lie in unconventional positions as they work. Recognizing that ADHD students may have strong needs to engage in activities that involve the hands or body, whole language teachers may be especially likely to provide for these needs through various curricular activities: hands-on math and science, creative drama, even music and dance, along with art.

8. Whole language teachers organize for collaborative learning: students working together on projects, sharing what they are reading and writing, helping each other solve problems, and so forth. Discussion and conversation are valued aspects of a whole language classroom, another advantage for ADHD students. As students work collaboratively, whole language teachers can help ADHD students develop self-control and social skills, while helping other students come to understand and accept the problems of ADHD students and begin to respond to them more positively.

9. Whole language teachers minimize the use of formal tests, but when they must administer them, they attempt to adjust to the needs of individual students. Some ADHD students may work impulsively; they need help in slowing down, thinking about, and checking their answers. Other ADHD students need extra time (even on standardized, timed tests), because their difficulty in concentrating slows them down. Whole language

teachers seek ways to meet these needs. Furthermore, they typically minimize the use of test scores in evaluating students, which is particularly important for ADHD students because they are rarely able to demonstrate their strengths on formal tests--standardized or otherwise.

10. Whole language teachers tend to communicate frequently with parents, encouraging them to share their understanding of their child, work together for the child's success, and even participate actively in facilitating classroom learning experiences. Though whole language teachers resist labeling students and therefore may be initially skeptical that a diagnosis of ADHD might be valid (or that medication may be valuable), they are typically willing to listen to parents, to read what parents recommend, and to try other ways of helping their children. Such close collaboration with parents can have particular benefits for the ADHD student.

The success of whole language teachers in educating special needs students is documented in the January 1982 issue of *Topics in Learning & Learning Disabilities*, Rhodes & Dudley-Marling, 1988; Dudley-Marling, 1990; Stires, 1991; and Five, 1992. See also the May 1991 issue of *Topics in Language Disorders*. In the early stages of development is a collection of articles focusing on whole language for ADHD students (Weaver, in preparation).

Structure in whole language classrooms

Of course, the traditional wisdom about ADHD students needing structure in the classroom is more right than wrong: it's just that they do not need all the kinds of structure required in classrooms emphasizing education by ditto.

There is far more structure in good whole language classrooms than initially meets the eye. In fact, experienced whole language teachers have come to realize that it is predictable structure and clear and consistent expectations that make it possible for children to function flexibly in the classroom and to take increased responsibility for their own learning.

Like other teachers, however, whole language teachers should realize that ADHD students may need additional help in carrying out the interesting, meaningful activities that the students are often eager to initiate, but not so able to complete--particularly if such activities and projects must be sustained over a considerable period of time and worked on outside of school. The following are among the kinds of structure that teachers can provide:

1. To help students grasp instructions, teachers can try the following: (1) obtain eye contact with an ADHD student before giving instructions, or before repeating instructions for the benefit of that student; (2) write instructions on the chalkboard and make sure that the ADHD student has copied them correctly; (3) write down instructions for the ADHD student; (4) check to be sure that the ADHD student understands instructions before beginning a task; (5) issue a complex set of instructions one step at a time. Such assistance may be needed even in whole language classrooms, where "instructions" often amount to suggestions and advice for accomplishing learners' own purposes.

2. Keep ADHD students' homework to a minimum: by providing for work to be completed during class, for example, and even by assigning them less homework than other students. Having worked extensively with schools to help ADHD students, psychologist Michael Gordon suggests no more than 30-45 minutes of homework for ADHD children in the elementary grades, and no more than an hour or so for older students (Gordon, 1991, p. 132). While ADHD students are able to sustain attention longer to tasks they find meaningful, even whole language teachers may need to make concessions about how much they expect ADHD students to accomplish outside of school.

3. To make sure ADHD students are organized to do whatever out-of-school work <u>is</u> required, make sure these students have such expectations and assignments written down, that they understand their assignments, and that they leave school with whatever materials

are needed to do their work. Teachers may see that such students have an assignment notebook, check the students' progress daily, and work with students and their parents to see that work is accomplished. ADHD students often need such support even when the "homework" involves a project they are highly interested in.

4. Collaborate with students to develop an organizational plan for completing major projects, then to develop a series of intermediate "due dates" and an assignment calendar. Subsequently, teachers may help students monitor their completion of each step of the work.

5. Work with students and parents to establish a method of supporting the student in doing out-of-school work. For example, they may agree to establish a "note-home" program, wherein the teacher reports on certain agreed-upon concerns, especially on work completed or not completed and turned in. Even high school ADHD students may need this kind of monitoring system daily (Pfiffner & Barkley, 1990; Copeland and Love, 1990).

Whole language teachers are typically quite willing to implement such procedures as needed for individual students, once they have become aware of the need. They are eager to find ways of enabling ADHD students to succeed in school, regardless of the students' problems with impulsivity, hyperactivity, and inattention. And whole language teachers define "success" as actually learning, not merely responding to demands to behave. Fortunately, students' engagement in tasks they find meaningful tends also to alleviate some of the behavior problems.

In addition, however, whole language teachers may directly help ADHD children learn to take more responsibility for their classroom behavior as well as their learning.

A whole language approach to behavior problems

The story of how a sixth grade teacher named Steve dealt with a problem situation illustrates how teachers can lead ADHD and other children with behavior problems toward taking increasing responsibility for their actions. The anecdote is from Mark Collis and Joan Dalton's *Becoming Responsible Learners* (1990):

In this situation Tanya and Troy, both known for temper outbursts, were each struggling to gain possession of the video's remote control. Steve told them to put the control down, and Troy did let go, but Tanya then lifted it above her head and hurled it against the wall, yelling defiantly. The following excerpts from Collis & Dalton (1990) focus just on how Steve dealt with the problem of the broken video control:

"I'm too angry to talk now," says Steve, "sit here until we all calm down enough to talk sensibly about this."

Five minutes later he returns to Tanya, reminding her that he will be contacting her parents about the incident because one of their class rules is that parents will be called when equipment is broken. Soon after initiating this discussion, Steve encourages Tanya to admit that she broke the remote control.

"What can we do about the remote control?" Steve asks.

"I could fix it," Tanya offers.

"That's one idea, can you think of another?" prompts Steve.

"I could pay for a new one, or take it home for Mum or Dad to fix," the ideas come more quickly.

"Have you any more ideas, Tanya?" Steve adds after a little pause.

"No," replies Tanya.

"So we have three ideas. You could fix it yourself. You could pay for a new one or you could ask your parents to help you fix or replace it," Steve summarizes. "Which of those ideas do you think you'll be able to do?"

"Well, I don't think I could fix it myself," Tanya says looking at the pieces scattered across the floor. "And I haven't got enough money to buy another one." Tanya pauses and looks down at her toes avoiding any eye contact with Steve.

"So which idea will work for you," prompts Steve.

"I could ask Mum and Dad to help me fix it or get another one I suppose," she answers reluctantly.

"So asking Mum and Dad to help you fix it or replace it will best solve our problem of the broken remote?" Steve queries.

"Yeah, Tanya replies a little more confidently.

"Well you talk to your Mum and Dad tonight and we'll get together tomorrow and see how you went. Remember I'll be talking to them this afternoon so they'll be expecting you to talk about what happened today pretty soon after you get home, right?" Steve adds smiling.

Tanya looks up and smiles faintly, "Right" she affirms. (Collis and Dalton, 1990, pp. 31-33).

In this incident, Steve demonstrates "shared ownership" and responsibility, encouraging Tanya herself to consider ways of making amends for the damage she has done. This is but one example from *Becoming Responsible Learners* of how teachers can help students take more responsibility for their learning and their behavior (Collis and Dalton, 1990).

Collis and Dalton present at the outset what they consider to be three major classroom leadership styles: teacher ownership and control, shared ownership and control, and child ownership and control. They recommend and demonstrate shared responsibility, with gradual release of responsibility to the children, yet continued flexibility in responding to changing situations. See Figure 3 for the application of this model to the control of

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Insert Figure 3 about here.

behavior. Though such an approach will not necessarily be more effective than psychologists' cognitive behavior training in producing long-lasting effects, it has the decided advantage of being longer-term (the entire school year) and of occurring in a naturalistic setting. Furthermore, the teacher can always retreat to a greater degree of shared control for a time, later relinquish some control again, and repeat this pattern as necessary.

Some ADHD students may never be able to entirely avoid incidents in which strong emotion leads them to be impulsively hurtful or destructive, but they can learn more effective ways of dealing with the problems that their actions cause.

Additional Educational Services: The Larger System

For both ADHD students and their classroom teachers to survive, they may need additional help from the school. In particular, the classroom teacher may need help assisting students with time-consuming organizational tasks (e.g. Pfiffner and Barkley, 1990, pp. 521-523, 531-534; Gordon 1991, p. 111).

Public Law 94-142 guaranteeing special education services does not specifically mention an Attention Deficit alone as a condition qualifying children for those services. However, the Office of Civil Rights within the federal Department of Education has ruled that AD(H)D students are guaranteed special educational services by Section 504 of the Rehabilitation Act of 1973, if their condition substantially limits their ability to learn or to benefit from the regular educational program (Gordon, 1991, p. 117; Copeland and Love, 1990, p. 12). During 1991, additional guidelines were issued by the Department of Education to guarantee students the right to special educational services solely on the basis of an Attention Deficit Disorder (with or without hyperactivity), either under Section 504 or under the "other health impaired" category of the Education of the Handicapped Act (now

the Individuals with Disabilities Education Act). A copy of the current U. S. Department of Education policy regarding the education of students with an Attention Deficit Disorder is included in the November/December 1991 issue of *The CH.A.D.D.er Box*, a member's newsletter of Children With Attention Deficit Disorders.

Here are some ways the school might provide support to such students and their teachers:

1. Provide an appropriate chunk of time at the end of the school day for the student to meet one-on-one with the resource room teacher or someone else appropriate, in order to go over the tasks and assignments the student had difficulty focusing on during class and make sure that the student is all set to do assigned homework. Such an academic support person could also help the student plan for completing larger projects and monitor the student's progress, relieving the classroom teacher from this sort of task.

2. Provide at the end of the school day someone to make sure that the student has his or her "note-home" form appropriately completed and signed by the teacher(s).

3. Provide an after-school supervised study hall for ADHD students and others needing such structure to complete their homework before leaving the school grounds.

4. Provide a classroom aide whenever there are three or more ADHD students in a class, with the aide's first priority being to work with these children.

5. Provide other pull-out or pull-in programs, as needed.

Many of these services could be performed by an aide rather than a fully-credentialed teacher. Indeed, significant help might be provided by administrative staff, a guidance counselor, a parent volunteer, an older student, or even a peer "buddy." Cost would be minimal, perhaps even nil, but such additional help might make the difference between school failure and school success for many ADHD students. The importance of these

kinds of assistance can scarcely be emphasized enough. If such support were more readily available, placement in a special education class would rarely be needed.

A word of caution is in order, however. Recognition of ADHD as entitling a student to special educational services can, unfortunately, serve to provide for such students the same skills-oriented education that has often characterized special education pull-out programs. Special services do not guarantee that the ADHD student will receive appropriate understanding or educational support.

What holds significantly more promise for attention deficit students is a systems approach, both to defining ADHD and to dealing with it. On the one hand, a systems perspective encourages us to view ADHD as a socially dysfunctional cluster of behaviors caused or exacerbated by the environment interacting with an individual having a biological predisposition toward these behaviors. ADHD represents a set of less-than-optimal relationships between the individual and the environment. We can improve these relationships, then, not only by changing the individual, but by changing the environment: by modifying how we interact with the person as well as what we expect or demand of him or her. That is, we can take the productive both/and stance and approach that logically follows from systems theory.

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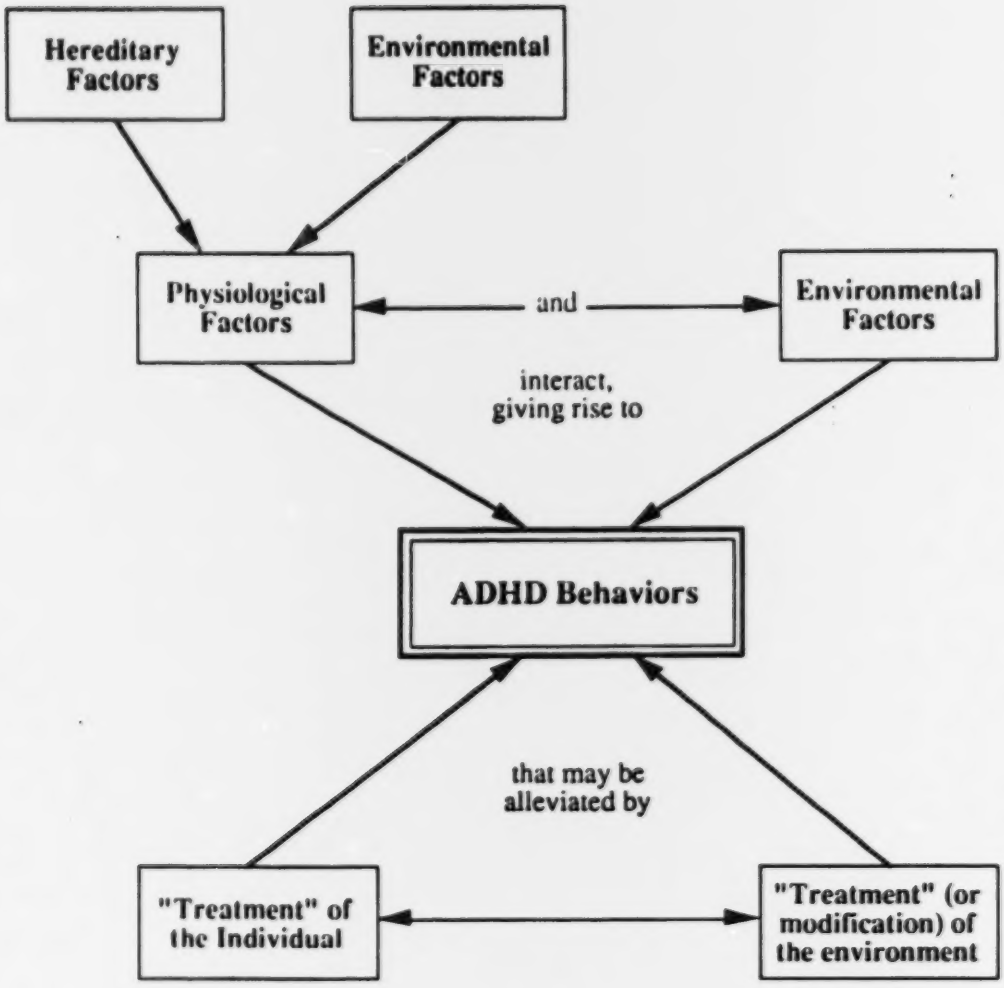

Figure 1. A both/and, systems-theory model of the genesis and alleviation of ADHD behaviors.

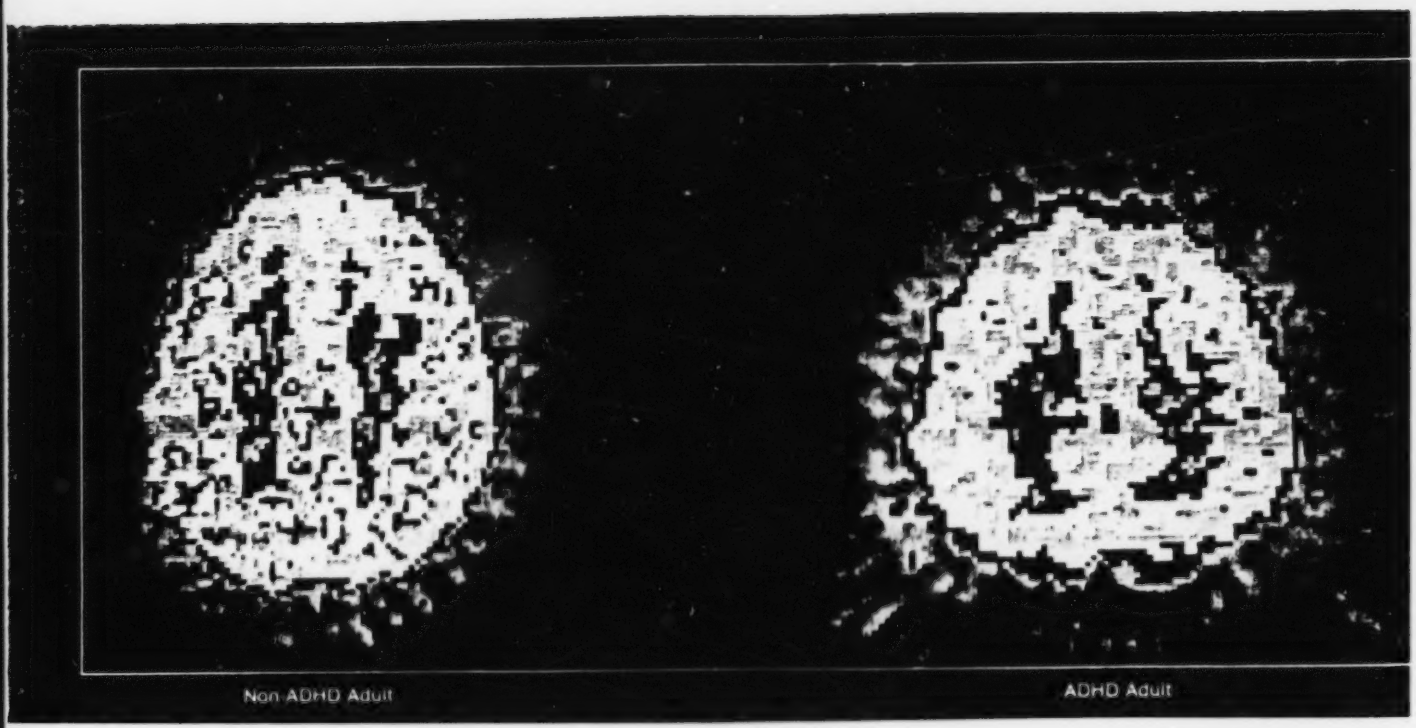

Figure 2. PET scan images: The image on the left is the normal control, while the one on the right is the ADHD adult.

The left side of each image represents the right side of the brain.
In the original color images, white, red, and orange indicate areas of relatively high glucose metabolism, whereas blue, green, and purple indicate areas of lower glucose metabolism.

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Classroom Leadership: behavior

Teacher Ownership	*Shared Ownership*	*Child Ownership*
* strong teacher control	* shared control	* strong child control
* "I decide what you will do"	* "let's decide together"	* "you decide what you will do"
*external control based on authority	*the teacher invites: --negotiation/input	*internal control based on self-direction/discipline
*teacher is responsible for behavior	--responsibility --co-operation	*"I'm responsible for how I behave"
*children are dependent on the teacher	*for behaving appropriately, children are learning both independence and interdependence	*children are independent of teacher
	*"I am responsible for my behavior and I care about the behavior of others"	

Figure 3. Different styles of classroom leadership, with respect to behavior (Collis & Dalton, 1990, p. 33).